Kentucky Lead Workgroup Meeting
October 26, 2016
1:30 – 3:00 PM EST
Kentucky Division of Water
300 Sower Blvd.
Frankfort, Kentucky

1. Call Meeting to Order and Roll Call of Membership – Greg Heitzman

2. Introduce Guests – Greg Heitzman

3. Approve Minutes of August 17, 2016 – Greg Heitzman

4. Update from EPA on Tier 1 Sampling Protocol – Peter Goodman & Tom Gabbard

5. Presentation by Training Sub-group – Gary Larimore, George Haynes, Kelley Dearing Smith

6. Review Sub-groups Assignments and Schedule – Greg Heitzman

7. Review Reporting Template – Greg Heitzman

8. Open Discussion for Workgroup

9. Public Comment Period

10. Next Workgroup Meeting, 1:30 PM – November 16, 2016

LEAD IN DRINKING WATER WORK GROUP
300 Sower Blvd, Frankfort, KY 40601
October 26, 2016

WORK GROUP MEMBER SIGN-IN SHEET

	Name	Agency/Organization	Email Address	Phone number
1	BRAD MONTGOMERY	ACEC-KY	bmontgomery@grwinc.com	(859)223-3999
2	Justin Sensabaugh	KY American Water	justin.sensabaugh@amwater.com	859-268-6342
3	Obe D. Cox	CARROLL CO. WATER	ocox@carrollcountywater.com	502-347-9500
4	Mike Gardner	LGWU	mgardner@lgwu.com	270-782-4366
5	Jennifer Burt	DPH	jennifer.burt@ky.gov	502-564-4537
6	Tom GABBARD	DOW	tom.gabbard@ky.gov	502-782-6952
7	Greg Heitzman	Bluewater KY	gheitzman@bluewaterky.com	502-533-5073
4	Ron Lovan	NKY WATER	RLOVAN@NKYWATER.ORG	859-441-5087
	Brian, Reagan, Bill, Tom. not able to attend			

LEAD IN DRINKING WATER WORK GROUP
300 Sower Blvd, Frankfort, KY 40601
October 26, 2016

PUBLIC SIGN-IN SHEET

Name	Agency/Organization	Email Address	Phone number
S. Morgan Faulkner	KY AG's Office	samanthafaulkner@ky.gov	502-696-5453
Melissa A Melton	RCAP	mam@capky.org	502.330.3548
JOE ULIASZ	DOW	Joseph.Uliasz@ky.GOV	502-782-6291
LANE BOLDMAN	KY. CONSERVATION COMMITTEE	DIRECTOR@KYCONSERVATION.ORG	502-209-9659
SARAH JON GADDIS	DOW	Sarah.gaddis@ky.gov	502-782-6953
Todd RITTER	DOW	todd.ritter@ky.gov	502-782-7050
Grey Hetzman	KY Lead Chair.		502-533-5073

Kentucky Lead Workgroup
Sub-Group Members
Updated 9-15-16

Workgroup Members	Organization		Representing	E-mail	Phone		
Greg Heitzman - Chair	BlueWater Kentucky		Water Industry	Gheitzman@bluewaterky.com	502-533-5073		
Jennifer Burt	KY Public Health		Public Health	JenniferA.Burt@ky.gov			
Obe Cox	Carroll County Water		Medium Systems	ocox@carrollcountywater.com			
Tom Gabbard	KY EEC		KY DOW	Tom.Gabbard@ky.gov			
Mike Gardiner	Bowling Green Municipal Utilities		KMUA/Medium Systems	mgardner@bgmu.com			
Ron Lovan	Northern KY Water District		Large Systems	RLovan@nkywater.org			
Brad Montgomery	GRW Engineers		ACEC/Engineering	BMontgomery@grwinc.com			
Bill Robertson	Paducah Water		Large Systems	brobertson@pwwky.com			
Tom Rockaway	U of L Engineering		Academic	rockaway@louisville.edu			
Justin Sensabaugh	Kentucky American		Private Systems	Justin.sensabaugh@amwater.com			
Rengao Song	Louisville Water		Large Systems	rsong@lwcky.com			
Brian Thomas	Marion Water Department		Small Systems	bthomas@marionky.gov			
Liasons:							
Gary Larimore	Ky Rural Water			g.larimore@krwa.org			
Kay Sanborn	KY AWWA			executivedirector@kytnawwa.org			
Peter Goodmann	KY EEC			Peter.Goodmann@ky.gov			
Bruce Scott	KY EEC			Bruce.Scott@ky.gov			
Recorder:							
Samantha Kaiser	KY EEC			Samantha.Kaiser@ky.gov			

Sub-Group (up to 5 members)	Report Out	Sub-Group Lead	Member 2	Member 3	Member 4	Resource 1	Resource 2
Public Health	Wednesday, April 20, 2016	Jennifer Burt	Tom Rockaway	Greg Heitzman		Matt Rhodes (JC Health Dept)	
Regulatory/Legislative	Wednesday, May 18, 2016	Tom Gabbard	Ron Lovan	Justin Sensabaugh	Obe Cox	Kay Sanborn (KyAWWA)	Tom Fitzgerald
Treatment/Corrosion Control	Wednesday, June 15, 2016	Rengao Song	Brad Montgomery	Bill Robertson	Justin Sensabaugh		
	July	No Meeting					
Distribution/Piping	Wednesday, August 17, 2016	Bill Robertson	Tom Rockaway	Mike Gardiner	Rengao Song		
	September	No Meeting					
Training	Wednesday, October 26, 2016	Gary Larimore	George Haynes (KDOW)	Tom Gabbard	Brian Thomas	Gary Larimore (KRW)	Kelley Dearing Smith (LWC)
Finance	Wednesday, November 16, 2016	Mike Gardiner	Ron Lovan	Greg Heitzman			
Early Warning/Monitoring	Wednesday, December 21, 2016	Rengao Song	Jennifer Burt	Greg Heitzman		Matt Rhodes (JC Health Dept)	
Communication/Education	Wednesday, January 18, 2017	Greg Heitzman	Ron Lovan	Brad Montgomery	Obe Cox	Kelley Dearing Smith (LWC)	

KENTUCKY LEAD REPORT

FOCUS AREA – PUBLIC HEALTH & LEAD

BACKGROUND INFORMATION:

A brief description of the subgroup topic area, less than 500 words

CURRENT CONDITIONS:

The current state of knowledge on the topic. This section contains the body of knowledge on the topic and should include charts, graphs, and exhibits to assist with communication. Remember the audience is the water industry and the general public, elected officials. This section has variable length, but typically will be 5 to 10 pages, including exhibits.

BEST PRACTICES:

This section is optional, and may include examples of best practices from other utilities across the state or nation, limit to 5 pages, and include exhibits, illustrations.

RESOURCE NEEDS:

This section includes identification of resources needed to advance the state of knowledge. It may include financial, training, technology, research, legislative and other resource needs.

RECOMMENDATIONS:

This section will include a summary of recommendations (less than 1 page) as follows:

The Kentucky Lead Workgroup provides the following recommendations:

- *Support for A*
- *Training for B*
- *Technology for C*
- *Funding for D*
- *Research for E*
- *Legislation for F*

ACKNOWLEDGEMENTS:

This section includes recognition for the people/resources used for the sub-group work:

- *Name, Credentials, Organization, email*
- *Greg Heitzman, PE, MBA, BlueWater Kentucky*

RESOURCES:

1. *Title, Author(s), Publication Source, Date, Website*
2. *Kentucky Division of Water Annual Report, Fiscal Year 2010, Commonwealth of Kentucky, Energy and Environment Cabinet, Department for Environmental Protection, Division of Water: htztp://water.ky.gov*

Kentucky Lead Work Group

Training Sub-Group

Brian Thomas - City of Marion
Tom Gabbard - KY DOW
Greg Heitzman - Bluewater KY
George Haynes - KY DCA
Kelly Dearing Smith - Louisville Water Company
Gary Larimore - KY Rural Water Association.

October 26, 2016

Kentucky Lead Work Group

How Do We Integrate Knowledge into our Curriculum?

Train..
Educate....
Communicate.

Existing Training

1. Federal Agencies
2. State Agencies
3. Trade Associations
4. Utilities
5. Other?

Training Providers

Training Delivery

1. Classroom
2. Webinars
3. On-line Courses
4. On-site
5. Other?

Training Venues

1. Conferences
2. Seminars / Workshops
3. On-line Course
4. Customized - On-site
5. Tail Gate Sessions
6. Other?

Safe Drinking Water Hotline

Educational Publications

Actions You Can Take To Reduce Lead In Drinking Water

https://www.epa.gov/dwreginfo/lead-and-copper-rule

Lead Free KIDS

National Lead Poisoning Prevention Week
October 23 - 29, 2016

https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water

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kentucky operator certification program

- Teach corrosion control and lead reduction during Distribution Certification School
- Add more literature to the training manuals to help with lead awareness, potential incidents, and ways to prevent lead poisoning

Upcoming Training involving Lead Topics

December 13 & 14th Lake Barkley State Resort Park Water Loss, Leak Detection and Distribution Deficiencies

January 19 & 20th 300 Sower Blvd Frankfort KY Lead Reduction and Awareness

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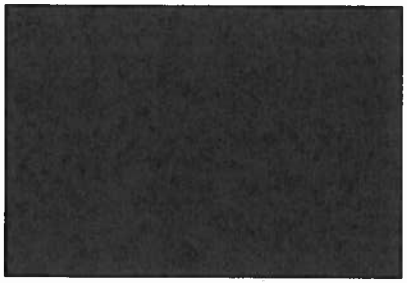
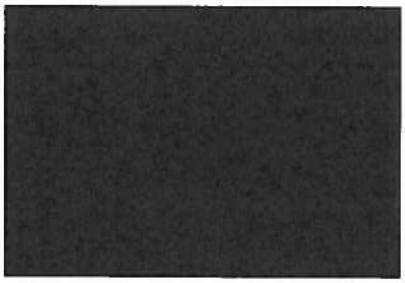
Lead Management ... Three Prong Approach

1. Maintain excellent water quality through **Corrosion Control**
2. Focus on Maintaining pipes that deliver water by **Eliminating Remaining Lead Service Lines**
3. Proactive **Customer Education** concerning lead in water

Louisville Water Company
Lead Service Line Replacement Program



Louisville Water Company
Flush the Line Program



Critical Stakeholders

1. Elected Officials
2. Management/Decision Makers
3. Board Members
4. Water Treatment and Distribution Operators
5. Customer Service Representatives
6. Health Department
7. Other?

Take Home Message

- Existing training does a good job covering the compliance aspects of the Lead and Copper Rule.
- Continue emphasis on water chemistry - corrosion control (Langelier Saturation Index)
- Continue providing continuing education training at conferences, seminars, etc.
- Focus on Infrastructure - Are utility personnel properly trained on identification of lead piping and proper protocols? Hands on Training

Take Home Message

- Utilities need assistance with public education.
- Enhance training on customer education.
  - Properly answering customer questions.
  - How to partner with schools, daycares, health departments, hospitals, nursing homes, etc.
  - How do you fold that training into what we already do?

Take Home Message

- Develop training to educate critical stakeholders.
- To properly educate the public - stakeholders must be properly trained on how to communicate the message.
- What is the Message?
  - Your water is safe to drink!

Drinking Water Advisory Council
Lead in Drinking Water (LIDW) Work Group
Draft Meeting Minutes
August 17, 2016

In attendance: Greg Heitzman, Chair (BWK), Jennifer Burt (DPH), Tom Gabbard (DOW), Mike Gardner (BGMU), Ron Lovan (NKYW), Brad Montgomery (ACEC), Bill Robertson (PWWKY), Thomas Rockaway (UofL), Justin Sensabaugh (KYAW),

Liaisons: Gary Larimore (KRWA), Kay Sanborn (KYTN-AWWA)

Absent: Obe Cox (CCW), Rengao Song (LWC), Brian Thomas (MWD)

Division of Water (DOW): Sarah Gaddis, Samantha Kaiser, Todd Ritter

Public Attendees: Amber Agee (DPH), Lane Boldman (KCC), Samantha Morgan Faulkner (KYOAG-ORI), George Haynes II (DCA), Representative Dennis Horlander (LRC), Melissa A. Melton (RCAP), Jim Smith (CCW)

The meeting was held at the Kentucky Division of Water office, 300 Sower Blvd, Frankfort, KY and began at 1:35 p.m. EDT.

Call Meeting to Order and Roll Call of Membership

Chair Greg Heitzman led the roll call and noted the absent members.

Introduction of Guests

Guests introduced themselves.

Approve Minutes of June 15, 2016

Changes were made to June Meeting Minutes and the Workgroup approved the June Meeting Minutes by consensus.

Presentation by Distribution Piping Sub-group

Bill Robertson gave a Power Point presentation regarding water distribution and piping materials. Lead joints in cast iron piping (generally used prior to 1960) should not be a major area of focus for a source of lead contamination in drinking water. The primary source of lead in drinking water in distribution systems will be from lead service lines/piping, pipe fittings that contain lead, such as meters, brass/bronze fittings and valves and from lead based solder.

There is currently no easy method to inventory buried lead service lines. There are methods that require significant amounts of effort and are costly for utilities. He suggested that the first step in inventorying lead services lines is a detailed review of local plumbing codes, customer files, old system maps, old field books, purchasing records, board meeting minutes, etc. to try to determine the location of lead service lines, or the date that utilities phased out the use lead for service lines and replaced with newer materials, such as copper. Several cities, such as Paducah and Louisville report the use of copper as a substitute for lead, beginning in the1930's. Some major US cities (i.e. Chicago) installed lead services into the 1980's.

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The next step for inventory of lead service lines is using GIS systems to identify areas that have the greatest potential for lead service lines based on the age of the water main, age of homes, or other historical data, such as service line installation records. Utilities can then excavate adjacent to the water main and look at the service line material. This can be performed by conventional excavation with backhoe, or by using vacuum excavation or hand digging. Another suggested approach is testing the water for lead at each meter and also testing water at the tap inside the home, which is an indirect method but quicker and costs less. The data collected can be analyzed to determine if lead is detected between the water main and meter and between the meter and the customers tap. This method has been used with inconsistent results at best.

The workgroup discussed how utilities deal with lead service lines when they are found. Utilities are not required to, but most do, replace lead services lines once they are exposed during excavation in the field. There is a concern that during a partial lead service line replacement, disrupting the service line could cause elevated lead levels. Once the excavation process begins to find lead service lines, generalizing where they are located can be inaccurate. Lead service lines have been found in close proximity to excavated locations where no lead service line was found, often due to previous repairs on the service line or materials used by plumbers on premise plumbing. Every community is different and every location is different.

Each utility is responsible for their lead service line inventory; some utilities have acquired other water systems which makes it difficult to establish an inventory for those lines. Some utilities are waiting until regulators reach a decision regarding lead service line replacement. Other utilities (i.e. Louisville) have an active lead service line replacement program, replacing up to 1,500 per year. There is not a 'one size fits all' solution for eliminating lead service lines. Each utility should review its history of lead service lines, it's lead compliance record, and treatment methods to determine if a lead service line replacement program should be implemented.

Other issues that need to be addressed are how best to communicate to the public, elected officials, and regulators; how operators need be trained to identify lead service lines; and how to integrate these concepts into standard practice. The group also acknowledged the importance of public education and operator training.

National Drinking Water Advisory Council (NDWAC) Report of Lead

The NDWAC Report on Lead (hard copy provided to Workgroup members) is a good resource for the subgroups to use when preparing subgroup reports. Water industry leaders published this report in August 2015, prior to the Flint Michigan lead crisis and this allows a pre-Flint viewpoint on the lead service line issue.

Review Subgroups Assignments and Schedule

The Workgroup discussed the subgroup assignments and schedule. There will be no meeting in September. The Training subgroup will present at the meeting in October, and the Finance subgroup will present in November.

Discuss Report Template

The Workgroup was reminded to convert each presentation into a text document for its report. Mr. Heitzman will email the report template to the Workgroup members.

Open Discussion for Workgroup

The Workgroup discussed the U.S. EPA Drinking Water Workshop that will take place in Cincinnati, Ohio on August 23 – 25 and Kentucky Rural Water Association's Annual Conference August 22 – 24.

Public Comment Period

No public comments were made.

Next Workgroup Meeting

The Workgroup reached a consensus that there will be no meeting in September. The Workgroup decided the next meeting will be held on October 26, 2016 at 1:30 p.m. EDT at 300 Sower Boulevard, Frankfort, KY. All future meeting presentations will be pushed back by one month. Mr. Heitzman will update the Workgroup membership and schedule spreadsheet and forward to Workgroup members.

Adjournment

The meeting adjourned at 3:00 p.m. EDT.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

WSG 200
Date Signed: October 13, 2016

OFFICE OF WATER

MEMORANDUM

SUBJECT: Implementation of the Lead and Copper Rule Provisions Related to Sample Site Selection and Triennial Monitoring

FROM: Peter C. Grevatt, Director
Office of Ground Water & Drinking Water

TO: Water Division Directors
Regions I-X

As part of EPA's on-going oversight responsibilities, the Office of Ground Water and Drinking Water (OGWDW) has worked with the Regions to conduct a thorough review of implementation of the Lead and Copper Rule (LCR). One area that requires additional attention relates to compliance sampling site selection and the use of tier 1 sites by community water systems (CWSs). I ask that you and your primacy agencies ensure that implementation of the LCR is consistent with the rule requirements discussed below and that this information is well-documented. I also request that you and your primacy agencies pay close attention to the documentation the agency will expect to have available during program reviews regarding future primacy agency decisions to approve requests from public water systems seeking to return to triennial monitoring[1] after a lead action level exceedance.

Tier 1 Sample Site Selection

Under the current LCR, the CWSs are required to identify and use tier 1 sites for their compliance monitoring under 40 CFR §141.86. When a system no longer has enough tier 1 sites in its sample pool to meet the minimum number of samples (e.g., due to plumbing changes or lack of homeowner participation), the system must identify other tier 1 sites to add to its sample pool.

[1] Systems serving more than 50,000 persons and small and medium systems with state-defined optimal water quality parameters must receive written approval from the primacy agency to return to reduced monitoring after a lead action level exceedance. 40 CFR § 141.(86)(d)(4)(vi)(B).

Tier 1 sampling sites are defined in the LCR as "single family structures[2]" that contain "copper pipes with lead solder installed after 1982 or contain lead pipes; and/or served by a lead service line."[3] As required under 40 CFR §141.86(a), all sites used for lead and copper compliance tap sampling must be tier 1 sites unless there are "insufficient tier 1 sampling sites." The phrase "insufficient tier 1 sampling sites" refers to sites in the distribution system. It does not refer to the sites currently in the sample pool.

Under the LCR, CWSs are required to identify a pool of targeted sampling sites that is sufficiently large to ensure the water system can collect the number of samples required in §141.86(c). The regulations at 40 CFR §141.86(a) (1) and §141.42(d) in Subpart E of Part 141, require water systems to develop a materials evaluation to identify the requisite number of tier 1 sites. The regulations at 141.86(a)(2) also state that the system is required to take additional measures "in order to identify a sufficient number of sampling sites" if the materials evaluation is insufficient. Specifically, the regulations state "... the system shall seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities): (i) All plumbing codes, permits, and records in the files of the building department(s) which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system; (ii) All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system; and (iii) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations."

In some cases, materials evaluations may not have been sufficiently robust to meet the targeted sampling site requirements of the rule or they may need to be updated. To ensure that a public water system is able to accurately identify the presence of tier 1 sites, the public water system should periodically update its materials evaluation to capture any recent changes to the available sites for sampling. For example, such updates would be opportune when distribution system maintenance projects occur. Several states have informed us that they are already requiring their public water systems to update their materials evaluations. EPA strongly recommends that public water systems maintain and submit upon request to their primacy agency documentation to confirm that the system periodically updates its materials evaluation including a description of the sources used to update this information.

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[2] Where multi-family structures make up more than 20 percent of the structures served by the system, those types of structures may be used instead of single family structures.

[3]Congress enacted the Safe Drinking Water Act Amendments of 1986 that included a prohibition on the use of pipe, solder, or flux that are not lead free in potable applications, including public water systems . Existing EPA guidance clarifies that tier 1 sites for solder generally should have ages between 1982 and the effective date of the lead ban in States (42 U.S.C. 300g-6). *Lead and Copper Rule Monitoring and Reporting Guidance for Public Water Systems, page 25: Document # EPA 816-R-10-004, March 2010*

Eligibility for Triennial Tap Monitoring for Lead after an Action Level Exceedance

Any water system approved for reduced tap monitoring must return to standard monitoring if it exceeds the action level according to 40 CFR §141.86(d)(4)(vi). To return to triennial monitoring, public water systems will need to complete two rounds of 6-month sampling and two years of annual monitoring with 90th percentile results below the action level.[4] For systems serving more than 50,000 persons and small and medium systems with state-defined optimal water quality parameters, the primacy agency must provide written approval for a system to return to reduced monitoring per 40 CFR §141.86(d)(4)(vi)(B).

EPA Regions should act in their oversight capacity, to clearly communicate the expectation that primacy agencies will critically consider relevant aspects of a water system's LCR program including corrosion control treatment and historical performance before granting triennial monitoring. In addition, where the primacy agency finds that a public water system is lacking in technical, managerial, and financial capacity, the primacy agency could decide to keep the system on an annual LCR monitoring schedule. Regions should communicate the expectation that primacy agencies will be prepared to provide appropriate documentation of the relevant factors taken into consideration when making decisions to approve or disapprove triennial monitoring for those systems subject to primacy agency approval. Regions should also communicate the importance of primacy agencies maintaining existing documentation supporting past decisions to approve a reduced monitoring schedule for systems that are required to obtain state written approval and have previously experienced concerns with lead in drinking water, such as systems that were approved for a reduced monitoring schedule soon after they had reported an action level exceedance. In accordance with 40 CFR §142.14(d)(5), primacy agencies must retain records of their monitoring frequency decisions, including the monitoring results and other data supporting the decision, the primacy agencies' findings based on the supporting data and any additional bases for such decision. Additional primacy agency record keeping requirements specific to the LCR are located at 40 CFR §142.14(d)(8).

EPA Regions should also communicate the expectation that the primacy agency will work with the water system to ensure they are identifying and addressing the root cause(s) of action level exceedances before the system commences or returns to triennial monitoring. For those systems which require written state approval, EPA expects that primacy agencies will be prepared to provide documentation demonstrating that they have reviewed those systems prior to approving a reduced monitoring schedule, to determine whether any additional factors exist that call into question the appropriateness of reduced monitoring, and to revise a system's eligibility as necessary for ensuring public health protection.

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[4] If a system has 90th percentile lead levels of less than or equal to 0.005 mg/L and 90th percentile copper levels of less than or equal to 0.65 mg/L for two consecutive six-month monitoring periods, they may resume triennial monitoring sooner in accordance with 40 CFR 141.86(d)(iv)(A) or (B) and 40 CFR 141.86(d)(4)(v).

Conclusion

EPA Regions, primacy agencies and public water systems should work together to ensure robust implementation of the current LCR. OGWDW will continue to support the Regions in these efforts, including promoting innovative approaches to identify lead service lines and lead components in drinking water distribution systems. Please share these technical recommendations with your primacy agencies' drinking water program directors. If you have any questions, please contact Anita Thompkins at thompkins.anita@epa.gov.